

REMARKS

Summary

Claims 1, 3, 5-8 stand rejected. Applicant respectfully traverses the rejection. Claims 1, 3 and 5-8 are pending after entry of this response.

Rejection of Claims

Claims 1, 3, 5-8 received a final rejection under 35 U.S.C. §103(a) as being unpatentable over Sugiura et al. (U.S. Patent 6,084,841) in view of Choi (U.S. Patent 5,995,473). The Examiner has made this rejection final by introducing new grounds for the rejection. Applicant submits that pending claims 1, 3, 5-8 are patentable over the reference cited by the Examiner.

Claim 1 recites an optical pickup comprising a light emitting part, a light receiving member and a beam splitter. Claim 1 also recites that the light emitting part provides laser beams that are mutually parallel to one another. The beam splitter provides a wavelength separating layer comprising a medium with a first and second interface where the material placed between the interfaces has a specific refractive index. The wavelength separating layer is formed such that the reflecting position of the first wavelength at the first interface coincides with the delivering position of the second wavelength which also coincides with the position of the delivery position of the first wavelength. In other words, the return beams of both wavelengths permeate the wavelength separating layer along the same path. Since this feature makes the beams coincident, the design of the total optical package is simpler.

Sugiura discloses an optical pickup device for two lasers having different wavelengths. This optical pickup device comprises a semitransparent mirror prism HM. See col. 5, ll. 5-6. One edge of the mirror prism is ground to provide a wedge shape for reflecting one of the laser beams at an angle so that the beams from both lasers become coincident. The angle for this wedge is dependent upon many factors including the positioning of the two separate lasers, the detector unit and the lenses. See col. 6, ll. 11-52.

This arrangement is unlike the arrangement of claim 1. Examiner states that the interfaces of the mirror prism selectively reflect the separate wavelengths. See

Office Action, pg. 3, ll. 1-2. Applicant respectfully disagrees. There is no mention of selectivity for wavelength reflection in Sugiura with regard to the surfaces of the beam splitter. Furthermore, since there is a wedge formed on Sugiura's beam splitter, not all of the planes for reflection are parallel as recited in claim 1. Thus, Sugiura's optical pickup does not teach or even suggest the arrangement of claim 1 because there is no reference to selective reflection or transmission of different wavelengths on or through wavelength-selective, parallel interfaces.

Choi discloses an optical pickup that is capable of being used for two different wavelengths. Choi teaches a wavelength tunable laser that diffracts as noted in the far field pattern. See col. 3, l. 5. Choi plans for this feature, as evidenced in figure 3, showing the beam dispersed across the face of a beam splitter. The beam splitter contains two dielectric films that selectively reflect the wavelengths for reading thick and thin discs. The specific dielectrics transmit all other wavelengths other than the wavelength for which they are tuned. The dielectrics are formed on the base 225 in two parts. The first part is an annular disk 222 on the surface of the base 225 closest to the light source and comprises the first dielectric. See Figure 3. The annular disk is formed around the perimeter of another disk which is the second dielectric or second part 224 on the same surface of the base. See col. 3, ll. 49-59. Notably, these dielectrics are not parallel to one another, but lie in the same plane across the same surface of the base 225.

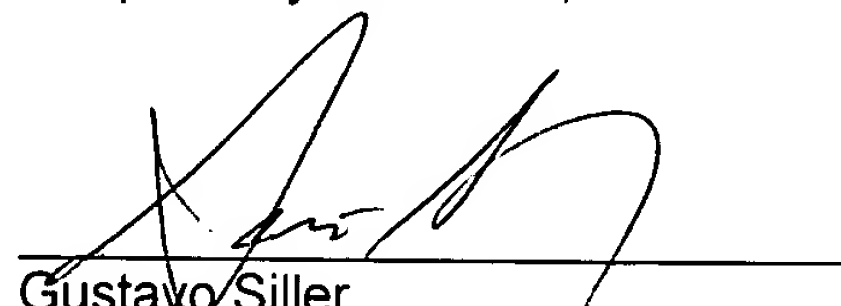
Choi's optical pick-up is unlike the arrangement recited in claim 1, since it neither directs nor causes the laser beams to become coincident at the beam splitter. Claim 1 recites an arrangement providing coincident beams by the use of a wavelength separation layer. There are no suggestions or teachings in Choi making the wavelength-separating layer between the dielectrics or reflecting materials obvious. Choi does not even utilize a wave-length separating layer since the dielectrics are co-planar. Further, Choi uses one laser, tunable to different wavelengths, and has no need to ensure that parallel beams impinge at one point on the beam-splitter. In fact, the light from the semiconductor laser diverges and does not form a beam without further optics. This is evident because Choi teaches that the beam broadly intersects across the face of the beam-splitter, both at the time of reflection and upon return from the optical disc. See Figure 3. From Choi, it would not be obvious to add a wavelength separating layer to provide coincident beams as recited in claim 1.

Moreover, there is no suggestion or teaching to combine the references. Even if they are combined there is no suggestion that taken together they would make the wavelength-separating layer obvious. Sugiura provides no wavelength-selective reflection capability, although both beams are refracted and reflected, they only coincide on the same path because of the wedge angle. In combination with Choi, there is no suggestion that the dielectrics would provide coincidence, especially since Choi is not concerned with multiple lasers. Neither mention, much less teach, separating the dielectrics into different parallel planes or what the thickness of such a wavelength-separation layer should be. Therefore, taken together, these references do not even remotely teach or suggest the arrangement of claim 1.

Conclusion

In view of the response above, Applicant respectfully submits that all of the pending claims are in condition for allowance and seek an early allowance thereof. If for any reason the Examiner is unable to allow the application in the next Office Action and believes that a telephone interview would be helpful to resolve any remaining issues, she is respectfully requested to contact the undersigned attorney.

Respectfully submitted,



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